

## ABSTRACT

The invention relates to a method for the controlled application of a stator-current target value ( $I_{Snom}$ ) and a torque target value ( $M_{nom}$ ) for a polyphase machine (4) that is supplied by an electronic power converter. According to the invention: current components ( $I_{Sdnom}$ ,  $I_{Sqnom}$ ) in a co-ordinate system (d, q) with a fixed rotor flux or rotating magnetic pole are calculated in accordance with a torque target value and in asynchronous machines in accordance with a rotor-flux target value ( $\Psi_{Rnom}$ ), a calculated rotor-flux actual value ( $\Psi_{R<SB>}$ ) or a rotating magnetic-pole flux; a stator-circuit frequency ( $\omega_{S<SB>}$ ) is determined; a terminal-flux target value ( $\Psi_{Knom}$ ) is calculated in accordance with the values ( $I_{Snom}$ ,  $I_{Sqnom}$ ,  $\Psi_{R<SB>}$ ,  $\omega_{S<SB>}$ ) by means of the machine parameters ( $L$ ,  $R_{S<SB>}$ ), said terminal-flux target value being subsequently projected onto a flux-course curve, selected from stored, off-line optimised flux-course curves. This permits the state of the stator current ( $I_{S<SB>}$ ) to be regulated in relation to the rotor flux ( $\Psi_{R<SB>}$ ) or rotating magnetic-pole flux by means of momentary values, facilitating a stationary and dynamic precise control of motor currents ( $I_1, I_2, I_3$ ) and thus the torques ( $M$ ) of a polyphase machine (4).